5.14 PUBLIC SERVICES AND UTILITIES

5.14.1 Affected Environment

Police, Fire, and Emergency Medical Services

The Federal Fire Department, under the supervision of Commander, US Naval Station Pearl Harbor, provides fire protection to Army installations on O'ahu. A one-company fire station is at SBMR, and a two-company fire station is at WAAF. Two commercial pumpers and two military field fire-fighting vehicles are based at the SBMR station, and crash fire rescue and commercial pumper equipment is based at WAAF (Belt Collins 1993).

Medical services available to all personnel at Schofield Barracks include access to TAMC in Honolulu, which provides a full complement of medical facilities, including medical evacuation by helicopter from outlying training areas and ranges. Medical services at SBMR include an outpatient clinic and two family planning clinics (Army Medical Command 2002). The acute care clinic provides basic ambulance services around the clock; after 9 PM, patients requiring emergency care are routed to TAMC.

Water Distribution

Potable water is supplied to SBMR, WAAF, US Army Field Station Kunia, HMR, and a Wahaiwā radio station by a well and water treatment facility located between the H-2 Freeway and Kamehameha Highway, across from the Wheeler gate (Belt Collins 1993). This facility produces and treats 4.0 to 9.0 MGD. The SBMR distribution and storage system is supplied via a 24-inch (61-centimeter) main, and East Range receives water through a 12-inch (30-centimeter) submain connected to the 24-inch (30-centimeter) main. The State of Hawai'i DLNR permit allocates a 12- month moving average of 5.648 MGD to the Army from the groundwater aquifer, approximately 640 feet (195 meters) below the ground surface. The average ranges from a low of 3.849 MGD in January to high of 6.948 MGD in September. The average for 2002 was 5.346 MGD, and the current average is at 5.4 MGD and is increasing. The water is pumped from the deep well by four pumps at a rate of 2,000 gallons (7,571 liters) per minute and is chlorinated before flowing into five air stripper towers where trichloroethane is removed. The water is then chlorinated a second time and injected with a fluoride solution before it enters a 200,000-gallon (757,082-liter) underground well for storage. This clear well contains seven booster pumps that transmit water into the distribution systems and storage tanks at the Army installations served by the SBMR system. Five of the booster pumps have a capacity of 1,400 gallons (5,300 liters) per minute, and two booster pumps, which were constructed in 1993 and serve the East Range exclusively, have a capacity of 1,040 gallons (3,937 liters) per minute (C. H. Guernsey & Company 2001).

The distribution system is divided into a low zone for the network, which runs north and east to serve the eastern portion of the Main Post and SBER, and a high zone for the western network, which extends to the western portion of the Main Post. Two 2-million-gallon (7.5-million-liter) steel tanks store water for the low zone, and two booster pumps send water to two 1-million-gallon (3.8-million-liter) concrete tanks in the high zone (Belt Collins 1993).

Based on a demand factor of 1.3 per person and a domestic allowance of 150 gallons (568 liters) per capita per day, the domestic daily demand was estimated at 4.13 MGD in the 1993 real property master plan. With the additional demands of NAVCAM 85, Helemanō Housing Area, UH Farm, golf course irrigation, and industrial demands, the required daily demand on the water system identified in the 1993 real property master plan was 5.23 MGD, of which the average estimated daily demand of SBMR was 3.059 MGD. Peak daily demands were estimated at 2.5 times the average.

Fire flow is the required number of gallons per minute at a specified pressure at the site of a fire for a specified period of time. The minimum required fire flow is two flows of 1,000 gallons (3,785 liters) per minute for two hours or one flow of 2,000 gallons (7,571 liters) per minute for three hours (Belt Collins 1993).

Wastewater and Stormwater

Wastewater is conveyed from SBMR to the treatment plant at WAAF using a gravity system with pipes ranging in diameter from 4 to 21 inches (10 to 53 centimeters). The WAAF plant is a secondary treatment facility that was constructed in 1976 and has been upgraded to a capacity of 4.2 MGD. The Army is planning to upgrade the treatment level from secondary to advanced tertiary. Completion of the necessary upgrades is expected in 2004. The system does not have redundant backup, so continuous maintenance is required so that spills are avoided (C. H. Guernsey & Company 2001).

Solid Waste Management

Based on the waste and recycling streams generated during the third quarter of 2002, SBMR generates an estimated 1,720 tons of industrial solid waste annually, which represents about 50 percent of the total estimated annual industrial waste stream generated by Army installations in Hawai'i (USARHAW 2002a). SBMR is the only area in the ROI for the proposed project that has a recycling program; the recycling facility is at Building 1087B (Ching 2002a).

Communications

Verizon Hawai'i provides commercial telephone service to the housing areas, mainly from direct buried lines, which are deteriorated and have virtually no useful life remaining. ATT-HITS provides official phone service to the Army in duct lines, recently installed by the Army. The Army is responsible for repairing and maintaining the official lines and for providing underground ducts for the commercial phone lines (C. H. Guernsey & Company 2001).

Electricity and Natural Gas

Two substations, Castner and Menoher, provide electric power to SBMR. These substations are supplied by one 44-kilovolt (kV) HELCO tap, and the service point is at the Castner substation. The 44 kilovolts are transformed to 7,200 volts at each substation. The Castner substation is made up of two main busses: Castner A, which is fed by two 5-megavolt-ampere (MVA) transformers and distributes power on six feeders, and Castner B, which is fed by two 5-MVA transformers and distributes power on 10 feeders. The Menoher substation is fed by one Army-owned 44-kV overhead line from Castner substation. The

Menoher bus is fed by two 5-MVA transformers and distributes power on five feeders. Most of this equipment is old, so the rate of failure, replacement, and outage is expected to be higher than average (Belt Collins 1993). If Menoher were to be shut down for any reason, much of the housing at SBMR would be without power. A HELCO backup 44-kV line from the Mikilua circuit along Kolekole Avenue was constructed to serve the Menoher substation, but the connections to the Castner substation cannot be closed while the backup line is in use or the breakers will be blown off-line due to the difference in impedance in the backup line (C. H. Guernsey & Company 2001).

The system capacity, as identified in the 1993 real property master plan, is 30,000 kVA. At the time this document was produced, this provided an excess capacity of 8,111 kVA, mainly from the Castner A (at 74 percent capacity) and Menoher (at 47 percent capacity) busses. Projected future loads were estimated at 4,822 kVA. Both Castner A and Menoher are expected to accommodate future loads, but Castner B (currently at 98 percent capacity) would be above capacity. Anticipated system upgrades that would increase system voltage from 7.2 kV to 12.47 kV would accommodate the projected future loads (Belt Collins 1993). A replacement for the Menoher substation is nearly completed and has twice the previous capacity but was not yet in use at the time of the electric utilities assessment for SBMR in 2001. New larger transformers and modern vacuum switchgear will be installed at Castner substation in 2002, and an $11 million system repair project is underway at SBMR (C. H. Guernsey & Company 2001).

5.14.2 Environmental Consequences

Summary of Impacts

Less than significant long-term adverse effects would be expected from the Proposed Action (Table 5-37), which would increase the number of local residents by 2,365. The additional population and the building space and facilities to be constructed, as well as any increases in training, would increase demand on utilities and services. Additional utilities would be provided for the projects that would require increased capacity; otherwise, existing systems would be expected to have adequate capacity to provide for these changes.

Similarly, No Action would be expected to have less than significant long-term adverse effects on public utilities. No changes to police, fire, and emergency services would occur; other effects are detailed below.

Proposed Action

Less Than Significant Impacts

Police, fire, and emergency medical services. Minor long-term adverse effects on law enforcement, fire protection, and emergency medical services would be expected. The increase in population and increased training activities could increase the demand for these services, but the services are expected to be adequate to accommodate such an increase. There would be no change in jurisdiction for any law enforcement agencies or fire departments.

Table 5-37
Summary of Potential Public Services and Utilities Impacts at SBMR/WAAF

Impact Issues	Proposed Action	Reduced Land Acquisition	No Action
Police, fire, and emergency medical services	⊙	⊙	○
Water distribution	⊙	⊙	○
Wastewater and stormwater	⊙	⊙	○
Solid waste management	⊙	⊙	○
Communications	⊙	⊙	○
Electricity and natural gas	⊙	⊙	○

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

LEGEND:

⊗ = Significant
⊘ = Significant but mitigable to less than significant
⊙ = Less than significant
○ = No impact
\+ = Beneficial impact
N/A = Not applicable

Water distribution. Minimal long-term adverse effects would be expected from the Proposed Action. The additional population would place an increased demand on the potable water system. Based on a demand factor of 1.3 per person and a domestic allowance of 150 gallons (568 liters) per capita per day as provided in the 1993 Real Property Master Plan (Belt Collins 1993), the increase in demand for a maximum population increase of 2,365 would be 461,175 gallons (1,745,737 liters) per day, which represents an increase of approximately 15.1 percent over the estimated daily demand of 3.059 million gallons per day (mgd) for SBMR.

Approximately 5.648 MGD are allocated to Army facilities from the well and water treatment facility across from Wheeler Gate, of which a total average daily demand to the system of 3.839 MGD was estimated with no golf course irrigation and 4.789 MGD with golf course irrigation. The remaining allocation of about 1.809 MGD without golf course irrigation and 0.859 MGD with golf course irrigation would be available to cover fire flows and this increased demand. Pressure inadequacies in the low service zones serving the Main Post could be worsened by the increased demand, but these can be improved by ensuring that at least two clear well pumps are in operation. In addition, the 1993 Real Property Master Plan identified that off-site water improvements would address this problem (Belt Collins 1993).

The facilities to be constructed, as well as any increases in training, likely would increase the demand for water at SBMR. Water for the UACTF, BAX, QTR1, and QTR2 would be trucked in, and no water lines, distribution systems, or wells would be required. No water would be required for the upgrade of WAAF for C-130 operations. Water would be supplied to the range control facility by connecting with an existing line to the east of the proposed facility. The motor pool is expected to use 17.6 million gallons (66.6 million liters) per year or

a daily average of 48,219 gallons (182,529 liters), which represents about 1.2 percent of the average daily consumption without golf course irrigation. A water tank would be constructed as part of the motor pool project (see Figure 2-8). The tactical vehicle wash would have a wash station using reclaimed water to minimize overall usage, and the station would recycle water. The multiple deployment facility at WAAF is expected to use 730,000 gallons (2,763,351 liters) of water annually, or a daily average of 2,000 gallons (7,571 liters), which is less than 1 percent of the average daily demand without golf course irrigation. The VFTF is estimated to need 14,000 gallons (52,996 liters) of water per year. The motor pool, multiple deployment facility, and VFTF are expected to use a total of 18.3 million gallons (69.3 million liters) per year. The capacity of the existing system is expected to accommodate these changes.

Wastewater and stormwater. Minimal long-term adverse effects would be expected from the Proposed Action. The additional population would be expected to place an increased demand on the wastewater system. Domestic users generate approximately 92 percent of the wastewater, and the remaining 8 percent is generated by industrial discharges. The SBMR wastewater treatment plant has a design capacity of 4.2 MGD and processes an average daily flow of 2.6 MGD from SBMR, WAAF, Camp Stover Kunia Military Reservation, Leilehua Golf Course, and HMR. Based on these capacity and daily flow rates, even at the maximum population increase, wastewater generation is not expected to increase beyond the capacity of the system. At the average annual per capita wastewater generation of approximately 123.95 gallons (469 liters) per day from SBMR family housing, as described in Appendix A of the 1993 Real Property Master Plan (Belt Collins 1993), wastewater flow to the SBMR wastewater treatment plant would increase by 0.29 mgd.

The building space and facilities to be constructed, as well as any increases in training, likely would increase the amount of wastewater generated at SBMR. Sanitary wastewater at the UACTF, BAX, QTR1, and QTR2 would be collected in aerated vault latrines and removed by pumper truck, so no sewage collection system or septic fields would be required. Sewage at the range control facility would be collected by connecting with an existing line on the site. The existing gravity collection system would be used at the motor pool. The tactical vehicle wash would have wash stations using reclaimed water to minimize overall water usage, and the station would recycle water to minimize wastewater disposal. Wastewater would flow through a sediment basin, an equalization basin, and a secondary treatment system, designed to remove oil, grease, and grit and to control organics. Any wastewater not flowing through the main system would be sent to an oil-water separator. Concrete curbing and a trench drain would control the flow of wastewater. The facility would be covered to limit rain infiltration and disposal of excess wastewater. No water would be required for the upgrade of WAAF for C-130 operations, and no additional wastewater would be generated. The multiple deployment facility at WAAF and the VFTF at SBMR would connect to the system by gravity flow. These changes are expected to be within the capacity of the existing system.

The Proposed Action would create impervious surfaces covered by buildings and paving. Drainage from these surfaces would be controlled using grading, curbs, drains, gutters, and other standard construction practices to minimize stormwater pollution and runoff.

Solid waste management. Minimal long-term adverse effects would be expected from the Proposed Action. The additional population would be expected to place an increased demand on the solid waste collection and disposal system. Residents of the family housing areas of HMR, Āliamanu, SBMR, WAAF, and Fort Shafter generate approximately 2,600 tons of solid waste per quarter (10,400 tons per year). Only a small portion of the waste generated would go to Waimānalo Gulch Landfill because the Army diverts 90 percent of the waste stream to Hpower, a waste-to-energy, and only the ash produced would be deposited at the landfill.

The building space and facilities to be constructed would generate construction and demolition waste that could reduce the useful life of the landfill; however, this reduction would be negligible, and recycling would minimize this waste stream. A minimal increase in solid waste is expected as a result of increases in training. This increase would be minimal because new training would be similar to existing training, and the only increase would be the waste generated by the increase in the number of Soldiers training. These changes are expected to be within the capacity of the existing waste collection and disposal system.

Communications. Buried telephone lines supplying telecommunications to the housing areas at SBMR are already in poor condition and are scheduled for maintenance or replacement in the five-year plan. The addition of new users to these lines or the installation of new lines would not affect the condition of these existing lines. The official phone line service is unusable due to a lack of documentation, a situation that would not be altered by the increase in personnel and dependents.

Many of the new facilities to be constructed under the Proposed Action include providing new communications and information systems. These include the UACTF, the motor pool, BAX, QTR1 and QTR2, the multiple deployment facility, FTI, the new range control facility, and VFTF.

Army staff have conducted an electromagnetic compatibility study for the Proposed Action , which considers over 65,500 frequency records from the civil sector and other federal government agencies. The results indicated no significant interference problems should be encountered on O'ahu from operating the FTI system (US Army Development Test Command 2003).

Electricity. Minimal long-term adverse effects are expected from the Proposed Action. The additional population would be expected to place an increased demand on the electrical distribution system. As identified in the utility risk assessment for SBMR (C. H. Guernsey & Company 2001), major electrical system upgrades, which began in 1997, are being completed, and additional upgrades are planned, improving the capacity of the substations. However, the distribution system continues to have problems, including aged direct buried aluminum conductors that need to be replaced and unfinished metering replacement at the housing area, that could affect the system's ability to supply existing and additional electric power demands. At the time the Real Property Master Plan (Belt Collins 1993) was produced, the system load was 21,889 KVA for 13,510 people in family housing and 37,700 employed on the post (Belt Collins 1993). The addition of a maximum of 2,365 staff and

dependents would not likely exceed the capacity of the upgraded system, particularly because the number of personnel at SBMR has decreased to 16,602.

The building space and facilities to be constructed, as well as any increases in training, would require additional electricity. The increased electricity demand caused by additional construction and expansion and increased training would likely be handled by the upgraded electrical system infrastructure with the planned future improvements and privatization. The UACTF, BAX, and QTR2 would involve installing a new primary line to a transformer on the site and underground secondary power lines from the transformer to the buildings. The range control facility would obtain power from an existing line to the west of the project site. The motor pool would use approximately 1,248,100 kWh per year of additional electric power for air conditioning, lights, receptacles, water heaters, air compressors, and hoists. The estimated energy demand for the multiple deployment facility is approximately 4,794,919 kWh per year, which would be covered by the existing power distribution system. QTR1 would include connection to existing primary power lines and extension of secondary power lines from control towers to targets and range limit markers. The estimated annual energy consumption of the VFTF is 1,008,800 kWh, which would be supplied through the existing substation and distribution system. Installing energy-efficient lighting, appliances, and insulation would reduce the demand for electricity.

Reduced Land Acquisition

Less than Significant Impacts

The public services and utilities impacts for Reduced Land Acquisition would be similar to those described under the Proposed Action. The additional population and the building space and facilities to be constructed, as well as any increases in training, would increase demand on utilities and service under Reduced Land Acquisition. Additional utilities would be provided for the projects that would require increased capacity; otherwise, existing systems would be expected to have adequate capacity to provide for these changes. Impacts on the utilities identified below would be slightly lower under Reduced Land Acquisition.

Approximately 1,300 acres (526 hectares) would not be subject to maneuver training by USARHAW under Reduced Land Acquisition, and as such, the demand on law enforcement, fire protection, and emergency medical services would be slightly less than under the Proposed Action. Less water would be trucked in; the sanitary wastewater volume to be collected in aerated vault latrines and removed by pumper truck would be lower; less telecommunications cabling would be required; and fewer new primary and secondary electrical lines would be required under Reduced Land Acquisition than under the Proposed Action, since QTR2 would not be constructed on SBMR.

No Action

Existing conditions would continue under No Action. Under the status quo of No Action, utilities impacts would continue at their current levels.